

ABSTRACT OF THE DISCLOSURE

An integrated heatsink and core power distribution mechanism. First and second power rails are disposed on opposite sides of one or more integrated circuits on a printed circuit board (PCB). The power rails are electrically coupled to a power supply and the integrated circuits. At the same time, the power rails are used to thermally couple one or more heatsinks to the integrated circuit(s). Each power rail includes at least one slot configured to receive a flange on the heatsink(s). In situations under which different voltages are supplied via the power rails, means are provided to electrically insulate at least one power rail from the heatsink(s) while maintaining thermal coupling to the power rails. In one embodiment, a split-rail configuration is used, wherein the power rail includes multiple conductive sections separated by one or more insulator sections. The scheme is well-suited for modular board/blade architectures, such as the Advanced Telecommunications Architecture (ATCA).